CLAIMS

The embodiment of the invention in which an exclusive property or privilege is claimed is defined as follows

1   1.   A device for heat-treating water, the device comprising:
2   a)   a confined heating zone;
3   b)   a means for transporting the water to said confined heating zone so as to
4   facilitate heating of the water;
5   c)   a means for preventing the heated water from leaving the device until
6   pathogens entrained in the heated water are killed; and
7   d)   a means for preventing pathogens entrained in unheated water from
8   leaving the device.

1   2.   The device as recited in claim 1 wherein the means for preventing
2   pathogens from leaving the device further comprises an antimicrobial substrate.

1   3.   The device as recited in claim 1 wherein the means for preventing heated
2   water from leaving the device includes a plurality of valves actuated by programmable
3   logic controllers.

1   4.   The device as recited in claim 1 wherein the heating zone is subjected to

2   to exhaust gas from a gas-fired combustion.

1   5.   The device as recited in claim 4 further comprising a zone for imparting
2   low pressure to the exhaust gas.

1   6.   The device as recited in claim 6 wherein the zone for imparting low
2   pressure to the exhaust gas is intermediate the antimicrobial substrate and the heating
3   zone.

1   7.   The device as recited in claim 1 wherein the water is heated to below its
2   boiling point.

1   8.   The device as recited in claim 1 wherein the confined heating zone con-
2   tains a means for heating the fluid and the step of subjecting the fluid to the controlled
3   atmosphere further comprises injecting the fluid into the controlled atmosphere at a fluid
4   flow defined by the following equation:
5   BTU/hr of the heater / (Y x ΔT)
6   wherein
7   ΔT = (Required Kill Temperature – Coldest possible inlet fluid temperature)
8   and where Y is derived from the following formula:
9   - (Specific heat of the fluid to be heated X Weight of the fluid to be heated X
10.   minutes in one hour).

1   9.   A method for reclaiming fluid contaminated with pathogens, the method
2   comprising:
3   a)   providing a heated, controlled atmosphere;
4   b)   subjecting the fluid to the controlled atmosphere for a time and at a
5   temperature sufficient to kill pathogens entrained in a liquid phase of the fluid;
6   c)   subjecting an aerosolized phase of the fluid to an antimicrobial substrate;

7   d)   releasing the liquid phase and the aerosolized phase to the ambient
8   environment.

1   10.   The method as recited in claim 9 wherein the controlled atmosphere has a
2   positive pressure flow leading to the ambient environment.

1   11.   The method as recited in claim 9 wherein the fluid is water.

1   12.   The method as recited in claim 9 wherein the temperature is below the
2   condensation point of the fluid.

1   13.   The method as recited in claim 9 wherein the controlled atmosphere con-
2   tains a means for heating the fluid and the step of subjecting the fluid to the controlled
3   atmosphere further comprises injecting the fluid into the controlled atmosphere at a fluid
4   flow defined by the following equation:
5-   BTU/hr of the heater $/$ (Y $\times$ ΔT)
6   wherein
7   ΔT = (Required Kill Temperature - Coldest possible inlet fluid temperature)
8   and where Y is derived from the following formula:
9   (Specific heat of the fluid to be heated X Weight of the fluid to be heated X
10   minutes in one hour).